

SQLite MiniProject

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1 SQLite Mini-Project.

{Producers}

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2 Initialize database

```
[1]: import sqlite3
[2]: con= sqlite3.connect("songs.db")
[3]: c = con.cursor ()
```

3 Our plan

We plan to create a database around songs.

3.1 Entities

Here are the entities we want to make:

- songs: title, name of artist, year, album name
- artist: name of artist, gender, nationality
- album: name, producer, ranking

Note : In real life album names are not unique, for simplicity we decided to assume that album name was unique.

3.2 Example data

- SONG: High Hopes, Panic at the Disco, 2018, High Hopes; Solo le pido a Dios, Leon Gieco, 1978, IV LP; Arcoiris, JBalvin, 2020, Colores;
- ARTIST: Panic at the Disco, Male, USA; Leon Gieco, Male, Argentina JBalvin, Male, Colombia
- ALBUM: High Hopes, Jake Sinclair; IV LP, Oscar Lopez Colores, Sky,

3.3 Questions:

- Select the name of artist, gender and album name order by name
- What is the average ranking for the albums
- What is the most recent album
- What are the number of songs by artist nationality

4 Implementing our plan

4.1 Create tables

```
[4]: c.execute(''' CREATE TABLE songs(  
      [title] text, [artistName] text, [year] integer, [albumName] text, constraint_  
      ↳pk primary key (title, artistName))  
      ''')
```

```
[4]: <sqlite3.Cursor at 0x105b7d3b0>
```

```
[5]: c.execute(''' CREATE TABLE artist(  
      [artistName] text primary key, [gender] text, [nationality] text)  
      ''')
```

```
[5]: <sqlite3.Cursor at 0x105b7d3b0>
```

```
[6]: c.execute(''' CREATE TABLE album(  
      [albumName] text primary key, [producer] text, [ranking] integer)  
      ''')
```

```
[6]: <sqlite3.Cursor at 0x105b7d3b0>
```

4.2 Insert data

```
[7]: data = [  
      ("High Hopes", "Panic at the Disco", 2018, "High Hopes"),  
      ("Solo le pido a Dios", "Mercedes Sosa", 1978, "IV LP"),  
      ("Arcoiris", "JBalvin", 2020, "Colores")  
  ]  
  c.executemany('INSERT INTO songs (title, artistName, year, albumName) values(?,?  
      ↳?,?)', data)
```

```
[7]: <sqlite3.Cursor at 0x105b7d3b0>
```

```
[8]: data = [  
      ("Panic at the Disco", "Male", "USA"),  
      ("Mercedes Sosa", "Female", "Argentina"),  
      ("JBalvin", "Male", "Colombia")  
  ]  
  c.executemany('INSERT INTO artist (artistName, gender, nationality) values(?,?,?  
      ↳)', data)
```

```
[8]: <sqlite3.Cursor at 0x105b7d3b0>
```

```
[9]: data = [
      ("High Hopes", "Jake Sinclair", 9),
      ("IV LP", "Oscar Lopez", 10),
      ("Colores", "Sky", 5)
    ]
    c.executemany('INSERT INTO album (albumName, producer, ranking) values(?,?,?)', data)
```

```
[9]: <sqlite3.Cursor at 0x105b7d3b0>
```

4.3 Clean up

```
[10]: con.commit()
```

```
[11]: con.close()
```

4.4 Queries

Query: Select the name of artist, gender and album name order by name

```
SELECT a.artistName, gender, albumName From artist as a JOIN songs as s
      on a.artistName = s.artistName;
```

Expected results:

| | | |
|--------------------|--------|------------|
| Panic at the Disco | Male | High Hopes |
| Mercedes Sosa | Female | IV LP |
| JBalvin | Male | Colores |

Query: What is the average ranking for the albums

```
select AVG(ranking) from album;
```

Expected results:

8

Query: What is the most recent album

```
select albumName from songs order by year desc limit 1;
```

Expected results:

Colores

Query: What are the number of songs by artist nationality

```
select count(title), nationality from songs as s join artist as a
      on a.artistName= s.artistName
      group by nationality order by nationality;
```

Expected results:

| | | |
|---|--|-----------|
| 1 | | Argentina |
| 1 | | Colombia |
| 1 | | USA |

5 Actual results

Here are the results from running our queries in SQLite Manager.

| | | | |
|--|--------------------|-------------|------------|
| SELECT a.artistName, gender, albumName From artist as a JOIN songs as s on a.artistName = s.artistName; | | | |
| Export | artistName | gender | albumName |
| 1 | Panic at the Disco | Male | High Hopes |
| 2 | Mercedes Sosa | Female | IV LP |
| 3 | JBalvin | Male | Colores |
| select AVG(ranking) from album; | | | |
| Export | AVG(ranking) | | |
| 1 | 8 | | |
| select albumName from songs order by year desc limit 1; | | | |
| Export | albumName | | |
| 1 | Colores | | |
| select count(title), nationality from songs as s join artist as a on a.artistName= s.artistName group by nationality order by nationality; | | | |
| Export | count(title) | nationality | |
| 1 | 1 | Argentina | |
| 2 | 1 | Colombia | |
| 3 | 1 | USA | |
| Enter with id or SQLite commands | | | |